

REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 15-22 are pending in this case. Claims 15-22 are amended by the present amendment and add no new matter. For example, amended Claims 15-22 are supported by the specification at page 7, line 1 to page 8, line 21.

In the outstanding Office Action, Claims 15-18, 20, and 22 were rejected under 35 U.S.C. §112, second paragraph; and Claims 15-22 were rejected under 35 U.S.C. §102(b) as anticipated by Mizoguchi et al. ("A Fast Burst Synchronization Scheme for OFDM," hereinafter "Mizoguchi").

With regard to the rejection of Claims 15-18, 20, and 22 under 35 U.S.C. §112, second paragraph, Claims 15-18 are amended to delete the phrase "is optimized." Further, Claims 16, 18, 20, and 22 are amended to remove "means plus function" language, and thus should no longer be construed under 35 U.S.C. §112, sixth paragraph. Accordingly, MPEP §2185 is no longer relevant to these claims. Consequently, Claims 15-18, 20, and 22 are believed to be in compliance with all requirements under 35 U.S.C. §112, second paragraph.

With regard to the rejection of Claims 15-22 under 35 U.S.C. §102(b) as anticipated by Mizoguchi, that rejection is respectfully traversed.

The invention recited in Claim 15 is a method including generating a preamble signal including at least a first part, where the first part includes 12 complex symbols mapped on every four subcarriers of all available 52 subcarriers of an OFDM system. The first part is designed for frame detection and/or AGC (automatic gain control).

Accordingly, amended Claim 15 recites in part:

generating said preamble signal comprising at least a first part, a second part following said first part in the time domain, and a third part following said second part in the time domain, wherein said first part is designed for a frame

detection and/or an AGC (automatic gain control), said second part is designed for a coarse timing and frequency synchronization, and said third part is designed for fine synchronization, and wherein each of said first and second parts contains a frequency domain sequence comprising 12 complex symbols mapped on every four subcarriers of all available 52 subcarriers of said OFDM system, and said third part contains 52 symbols, each set to 1 or -1, mapped on said all available 52 subcarriers;

generating a time domain signal from said preamble signal by performing an inverse fast Fourier transform (IFFT) on said frequency domain sequences; and

transmitting said time domain signal from a transmitter side to a receiver side of said OFDM system;

wherein said 12 complex symbols in the frequency domain sequences of said first and second parts are set so that a synchronization performed in the receiver side includes correlating said frequency domain sequence of said first part and said frequency domain sequence of said second part.

In contrast, Mizoguchi describes a burst synchronization scheme with a preamble signal containing only *two* parts, both of which are identical.<sup>1</sup> Accordingly, Mizoguchi does not teach “a third part following said second part in the time domain” as recited in amended Claim 15, much less that “said third part is designed for fine synchronization.”

Mizoguchi further describes that the preamble signal is generated using the same operation as is applied to data symbols such that the synchronization symbol, i.e. the first part of the preamble, is the same as the second part of the preamble.<sup>2</sup> Thus, as the first and second parts are always the same, Mizoguchi does not teach that “said first part is designed for a frame detection and/or an AGC (automatic gain control)” or “said second part is designed for a coarse timing and frequency synchronization” as recited in Claim 15. Further, Mizoguchi also fails to teach that “each of said first and second parts contains a frequency domain sequence comprising 12 complex symbols mapped on every four subcarriers of all available 52 subcarriers of said OFDM system.” Consequently, as Mizoguchi does not teach each and

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<sup>1</sup>See Mizoguchi, page 126 and Figure 2(b).

<sup>2</sup>See Mizoguchi, page 126 and Figure 2(b).

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Reply to Office Action of October 18, 2005

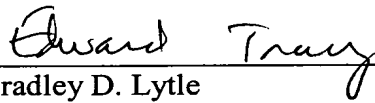
every element of Claim 15, Claim 15 is not anticipated by Mizoguchi and is patentable thereover.

Amended Claims 16-22 recite similar elements to Claim 15. Accordingly, Claims 16-22 are patentable over Mizoguchi for at least the reasons described above with respect to Claim 15.

Accordingly, the pending claims are believed to be in condition for formal allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,  
MAIER & NEUSTADT, P.C.



Bradley D. Lytle  
Attorney of Record  
Registration No. 40,073

Customer Number  
**22850**

Tel: (703) 413-3000  
Fax: (703) 413 -2220  
(OSMMN 06/04)

Edward Tracy  
Registration No. 47,998

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